

9595A Experimental Design Syllabus
Department of Political Science
Instructor: Dr. Amanda Friesen

Social scientists seek to describe, explain, and predict social phenomena. Increasingly, scholars are using experiments to better understand mechanisms and investigate causal claims underlying human behaviour. Political scientists have established a strong foundation of survey experiments, field experiments, and a growing number of lab experiments to test questions regarding vote choice, group attitudes, public opinion, and policy preferences. Students in this course will: (1) be introduced to and evaluate survey, lab, and field experiments, understanding tradeoffs between internal and external validity; (2) devise an experiment to test a question of interest to their research; (3) learn about and engage with open science practices, including creating pre-analysis plans, registered reports, and transparent data/code; and (4) critically engage experimental work from ethical, democratic, and inclusive perspectives.

Objectives:

- Understand the logic of experimental design and its contribution to causal inference.
- Become familiar and engage with Open Science practices.
- Evaluate strengths and weaknesses of experimental designs in surveys, the lab, and the field.
- Design experiments to test individual hypotheses.
- Develop awareness of ethical issues surrounding experimental treatments on human subjects.

Required readings:

Cambridge Handbook of Experimental Political Science. 2011/2012. James Druckman, Donald Greene, James Kuklinski, and Arthur Lupia, eds. Cambridge University Press.

Druckman, James N. 2022. *Experimental Thinking: A Primer on Social Science Experiments*. Cambridge University Press.

Articles available on OWL.

Assignments:

Participation (10 points): This is a graduate-level seminar so group discussion is an important component of the learning environment. Students are not required to speak in every discussion but rather should demonstrate a pattern of being engaged, asking questions, and offering comments on a regular basis.

Complete Human Subjects Ethics Training (5 points): Complete all modules in the Tri Council Course on Research Ethics and submit certificate online in OWL. The modules can be found here: <https://tcps2core.ca/welcome>. **Submit certificate on OWL by Sept. 23.**

Open Science Response Paper (5 points): Select a peer-reviewed from this list of Open Science resources: <https://osf.io/9tf6e>. Write a response to the article (1-2 pages), discussing if and how open science practices may address particular problems with academic research. This should not be a summary of

the article but your original thought and evaluation of what is discussed. **Due at 11:55 p.m. Sept. 20.**

Presentation of Cambridge Handbook Chapter (10 points) – Students will select one chapter from Parts III – VIII in the Cambridge Handbook and give a 15-minute presentation with slides summarizing the chapter and providing ideas for future research directions in that area. This may overlap with a student's interests and proposed research design for the other class assignments. Students may not choose the same chapter. **Due Nov. 19, start of class.**

Research Question & Hypotheses (10 points): Identify and explain a research question that is amenable to experimental design and outline at least two hypotheses to be tested. This should be no more than 2 pages and include a brief literature review/justification for the hypotheses and motivation of the research question. See example on OWL. **Due at start of class Oct. 14.**

Experimental Designs (20 points): Design two experiments to test your already submitted research question and hypotheses. Use class materials and social science literature to justify your design and methodological choices. **Due at start of class Nov. 11.**

Pre-Analysis Plan (40 points): Students will write a pre-analysis plan, building on the research question/hypotheses and experimental design assignments submitted earlier in the term, taking into account feedback from peer review and Professor Friesen's feedback. This plan should include 5-6 pages of literature review, including why an experimental design is a helpful or necessary approach to addressing the question at hand. Another 4-5 pages should be dedicated to explaining the experiment in detail, including the sample recruitment and an appendix with the full protocol or survey (depending on the type of experiment). This section should also include descriptions of how the data will be cleaned and coded and which statistical tests will be used to describe the data and test the identified hypotheses. The final section should be a brief discussion of limitations and implications of possible results. **Due at 11:55 p.m. December 8.**

September 9 – Introduction – What are experiments and why should we care?

Druckman *Primer*, Chapter 1: Why a Primer on Social Science Experiments?
Cambridge Handbook, Chapter 1: Experiments in Political Science

September 16 – No Class, APSA Annual Meeting

Complete ethics training <https://tcps2core.ca/welcome>
Select and read an Open Science paper from the list above, response paper due Sept. 20.

September 23 – Research Design, Experiments, and Open Science Practices

Druckman *Primer*, Chapter 2: The Scientific Process and How to Think about Experiments
Cambridge Handbook, Chapter 2: Experiments

McDermott, Rose. "Experimental methodology in political science." *Political Analysis* 10, no. 4 (2002): 325-342.

Lakens, D. (2019). The value of preregistration for psychological science: A conceptual analysis. *Japanese Psychological Review*, 62(3), 221-230.

Discussion of articles read for Open Science papers.

September 30 -- Random Assignment & Causal Inference

Druckman *Primer*, Chapter 3: Evaluating Experiments: Realism, Validity, and Samples
Cambridge Handbook, Chapter 3: Internal and External Validity

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845-851. DOI: 10.1037/0022-3514.89.6.845

Grosz, M. P., Rohrer, J. M., & Thoemmes, F. (2020). The taboo against explicit causal inference in nonexperimental psychology. *Perspectives on Psychological Science*, 15(5), 1243-1255.

October 7 – Sampling, Power Analysis & Measurement

Druckman *Primer*, Chapter 4: Innovations in Experimental Design: Opportunities and Limitations

Bloom, H. S. (1995). Minimum detectable effects: A simple way to report the statistical power of experimental designs. *Evaluation review*, 19(5), 547-556.

Charness, G., Gneezy, U., & Kuhn, M. A. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behavior & Organization*, 81(1), 1-8.

Krupnikov, Y., & Levine, A. S. (2014). Cross-sample comparisons and external validity. *Journal of Experimental Political Science*, 1(1), 59-80.

October 14 – Survey Experiments & Conjoint

Cambridge Handbook, Chapter 8: The Logic and Design of the Survey Experiment

Dafoe, A., Zhang, B., & Caughey, D. (2018). Information equivalence in survey experiments. *Political Analysis*, 26(4), 399-416.

Condon, M., & Wichowsky, A. (2022). Economic anxiety among contingent survey workers. *Current Psychology*, 1-4.

Bernhard, R., & Freeder, S. (2020). The more you know: Voter heuristics and the information search. *Political Behavior*, 42(2), 603-623.

Research Question & Hypotheses Assignment due.

October 21 – Behavioral economics/games experiments

Guest Lecturer: Dr. Jordan Mansell

Bonau, S. (2017). A case for behavioural game theory. *Journal of Game Theory*, 6(1), 7-14.

Levitt, S. D., & List, J. A. (2007). What do laboratory experiments measuring social preferences reveal about the real world?. *Journal of Economic perspectives*, 21(2), 153-174.

Mansell, J., & Petersen, M. B. (2022). Political ideologies as social strategies: does ideological variation predict behavioral variation in cooperative dilemmas?. *Current Psychology*, 1-18.

October 28 – Surveys/Conjoint Experiments. How do we know if it worked?

Druckman *Primer*, Chapter 5: What to do before, during and after an experiment
Cambridge Handbook, Chapter 31: Treatment Effects

Hainmueller, J., Hangartner, D., & Yamamoto, T. (2015) Validating vignette and conjoint survey experiments against real-world behavior. *Proceedings of the National Academy of Sciences*, 112(8), 2395-2400

Motta, M. (2021). Can a COVID-19 vaccine live up to Americans' expectations? A conjoint analysis of how vaccine characteristics influence vaccination intentions. *Social Science & Medicine*, 272, 113642.

Mummolo, Jonathan, and Erik Peterson. "Demand Effects in Survey Experiments: An Empirical Assessment." *American Political Science Review* 113, no. 2 (2019): 517-29.
<https://doi.org/10.1017/S0003055418000837>.

November 4 - Reading Week

November 11 -- Lab experiments

Cambridge Handbook, Chapter 6: Laboratory Experiments in Political Science

Clifford, S., & Jerit, J. (2014). Is there a cost to convenience? An experimental comparison of data quality in laboratory and online studies. *Journal of Experimental Political Science*, 1(2), 120-131.

Carlson, T. N., McClean, C. T., & Settle, J. E. (2020). Follow your heart: Could psychophysiology be associated with political discussion network homogeneity?. *Political Psychology*, 41(1), 165-187.

Experimental designs assignment due.

November 19 - Presentations from Cambridge Handbook Chapter Selections

November 26 – Field & Natural Experiments

Cambridge Handbook, Chapter 9: Field Experiments in Political Science

Sands, M. L., & de Kadt, D. (2020). Local exposure to inequality raises support of people of low wealth for taxing the wealthy. *Nature*, 586(7828), 257-261.

Broockman, D., & Kalla, J. (2016). Durably reducing transphobia: A field experiment on door-to-door canvassing. *Science*, 352(6282), 220-224.

Kristiansen, M. H., Maas, I., Boschman, S., & Vrooman, J. C. (2022). Refugees' transition from welfare to work: A quasi-experimental approach of the impact of the neighbourhood context. *European Sociological Review*, 38(2), 234-251.

December 2 – Deception and Ethics

Cambridge Handbook, Chapter 5: Economics, versus psychology experiments: Stylization, incentives, and deception

Druckman *Primer*, Chapter 6: Designing “good” experiments

McDermott, R., & Hatemi, P. K. (2020). Ethics in field experimentation: A call to establish new standards to protect the public from unwanted manipulation and real harms. *Proceedings of the National Academy of Sciences*, 117(48), 30014-30021.

Williamson, Vanessa. 2016. “On the Ethics of Crowd sourced Research.” PS: Political Science & Politics

December 2 – Final paper workshop

December 8 – Final papers due at 11:55 p.m.